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A Rare Case of Inferior Glenohumeral Joint Dislocation during a Martial Art Fight

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Abstract: The shoulder dislocation in its erecta form is a rare variety that represents 0.5% of all shoulders dislocations. Few cases have been reported, so the treatment outcome has been poorly defined, and it is more commonly associated with neurovascular damage than other types of shoulder dislocation. We describe a case of a 20 year-old male who presented to our emergency centre with an inferior shoulder dislocation during an amateur karate fight in a local competition. Radiography examination of the right shoulder was performed which revealed the classical appearance. The injury was subsequently relocated by closed reduction technique under general anesthesia. The evolution was favorable especially in the absence of vascular and nervous complications as well as rigorous immobilization and functional reeducation. The usual injury mechanism is the sudden application of pressure from above on a shoulder joint in abduction and external rotation, bent elbow. To carry out the reduction, traction - counter-traction is applied, in alignment with the humerus in abduction, this manipulation being followed by an arm adduction.

Keywords: erecta Dislocation, lower shoulder dislocation, martial art, treatment result.

INTRODUCTION

Inferior gleno-humeral dislocation also known as “luxatio erecta” or “hand up dislocation” is a rare variety of the shoulder dislocation; it is less than 0.5% of the glenohumeral dislocation complex [1].

Shoulder luxatio erecta is generally evidenced by its highly evocative clinical appearance and should be suspected in the young subject after a shoulder trauma presenting a hyper-abduction and externally rotation attitude of the upper limb. We report the case of a young man who practices karate as a sport, having shoulder inferior dislocation, during a fight in a regional competition

The purpose of this work is to insist on the rarity of these dislocations and to recall their clinical, therapeutic and evolutionary peculiarities, as well as to show the possibility of occurring during combat sports.

CASE REPORT

This is a young man aged 20, with no particular antecedents who, during a Karate fight, suffered a forced and brutal abduction of the right shoulder by his opponent, causing intense pain with total functional impotence of the same member.

Clinically, the patient presented to the emergency department with a very particular attitude: the traumatized arm in hyper-abduction; the elbow and the hand supported by the contra-lateral hand and the patient remains unable to lower his limb *(Figure 1).* Physical examination allows humeral head palpation below the scapular glenoid against the lateral wall of the rib cage. Systemically performed neurovascular examination was normal

The standard radiography shoulder confirmed the lower displacement of the head compared to the glenoid cavity *(Figure 2 and Figure 3).* The patient was referred to the emergency operating room, he benefited from a reduction under general anesthesia followed by elbow bandage to the body, type” Dujarier”, for three weeks *(Figure 4).* The patient left the hospital the same day, then underwent fifteen functional rehabilitation sessions with good results observed at the end of the second month

Fig-1: Upper limb attitude in abduction external rotation of the shoulder with elbow flexion

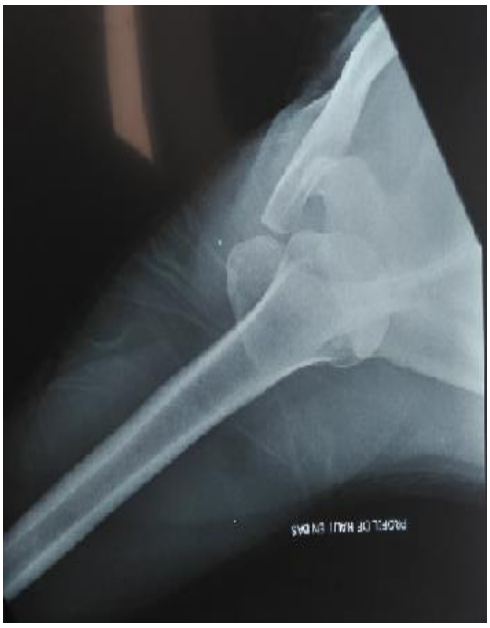

Fig-2

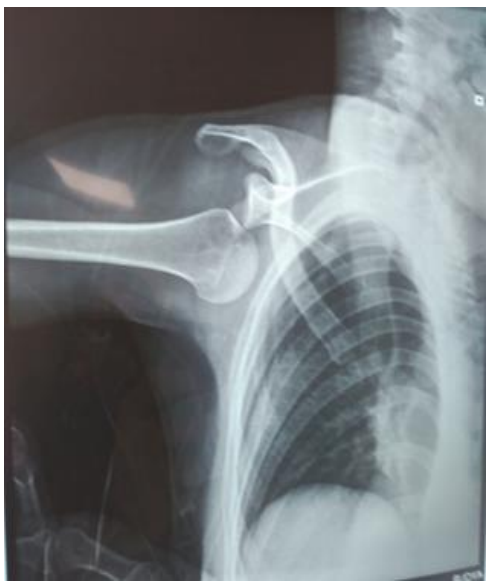

Fig-3

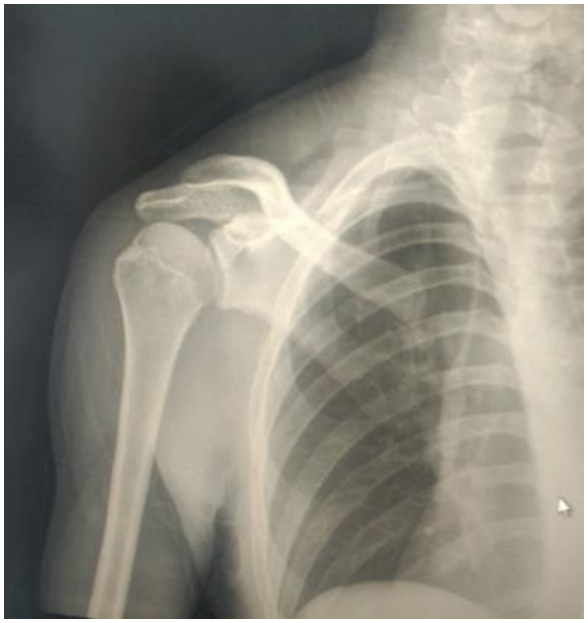

Fig-4: X-ray of the right shoulder after dislocation reduction

X-rays of the right shoulder showing the lower displacement of the humeral head compared to the glenoid cavity

DISCUSSION

Described for the first time in 1895 by Middeldorpf and Scharm [2], erecta dislocation is a relatively rare entity, representing only 0.5% of all shoulder dislocations [3], bilateral dislocations are even rarer with less than twenty registered according to our knowledge [4].

It is reported in the literature that there are two main types of erecta dislocation mechanisms: a direct mechanism by applying violent abduction forces on a limb initially abducted, the acromion acting as a lever for the humerus axis; and an indirect mechanism following the application of a heavy load on a limb in complete abduction [5]. Erecta dislocation predominates at the young age with an average age of 31 years, and the male sex is the most affected, its first etiology is the public road accidents followed by sports accidents [6] and the ligamentous hyperlaxity has been reported in several series as a favoring factor [7].

Clinically, the pathognomonic sign often encountered in the lower dislocations is an abducted shoulder with a bending elbow and the forearm behind the head [8], then the patient is not able to lower his arm, hence the nomenclature: " hand up dislocation ".

There is a high risk of neurological complications (axillary nerve, radial nerve) and it is the dislocation that has the highest incidence of vascular complications, it is systematically necessary to look for the distal pulses as well as the clinical signs in favor of a neurological paralysis of the affected limb [9].

Although the positive diagnosis can be made clinically, a radiological assessment is necessary to confirm the dislocation and reveal any associated lesions. The standard frontal radiograph and a true axillary profile show the humeral head projected below the lower pole of the glenoid [10]. According to the Gagey *et al*. Study, which used an anatomopathological classification based on MRI, the lesion of the lower glenohumeral ligament as well as the adjacent labrum was constant. Erecta dislocation occurred when the tear of the lower glenohumeral ligament was longitudinal [5], and for this type of dislocation to occur, it is absolutely accompanied by a disinsertion of the deep face of the rotator cuff.

The shoulder lower dislocation should be reduced urgently under general anesthesia, which consists of pulling the arm in the limb axis while the aid applies a counter-support to the thorax [11]. The arm then brought back into adduction and an elbow immobilization to the body is kept for 3 weeks. A post-reduction radiography must be done to confirm the success of the reduction and to detect any iatrogenic fracture [12].

The evolution can be marked by various complications according to the patient age, thus, the most frequent complication before 45 years is the dislocation recurrence. After 45 years, rotator cuff lesion and major tuber fracture are possible [13].

Rehabilitation is the only guarantee of a satisfactory functional recovery [14], it consists of functional and sensitive-motor rehabilitation [15]. The long-term prognosis of erecta dislocation is generally favorable.

CONCLUSION

Erecta dislocation is a rare condition. His diagnosis is posed clinically and confirmed by standard radiography. Due to the significant displacement of the humeral head, Vascular and nervous complications are common. The triad: reduction, bandaging and early rehabilitation is the guarantor of a good evolution. Surgical stabilization may be proposed for recurrent dislocations

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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